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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/735,170

12/12/2003

Shunji Suzuki

JP920000179US2

1676

(8728-543D)

7590

06/29/2004

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EXAMINER

RUDE, TIMOTHY L

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/735,170

Applicant(s)

SUZUKI, SHUNJI

Examiner

Timothy L Rude

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 10-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/907,087.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Claims

1. Claims 1-9 are canceled.

Claim Objections

2. Claim 10 is objected to because of the following informalities: A third step of replenishing the liquid crystal cell with liquid crystal by use of a capillary phenomenon follows a second step of discharging bubbles mixed in the liquid crystal from the inside of the liquid crystal cell by pressing the liquid crystal cell in a direction where the two substrates approach to each other which in turn follows a first step of obtaining a liquid crystal cell having liquid crystal filled between two substrates stuck together by a sealant. It is not clear why a cell that has been filled with liquid crystal material with bubbles removed would ever need any replenishment of liquid crystal; steps one and two are considered sufficient to result in a full, bubble free cell. Appropriate correction is required.

Claim 14 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

As to claim 14, the method of fabricating a liquid crystal cell wherein liquid crystal is replenished from a side of a conveying direction set for conveying the liquid crystal cell between the fabricating steps is relevant only to automation of the method [the automated conveying direction]. Directional sense only has relevance to the apparatus for manufacturing the claimed device. Such directional sense might be appropriate for claims drawn to invention of an apparatus as opposed to the method performed by the apparatus. Limitations pertinent to an apparatus do not further limit method claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

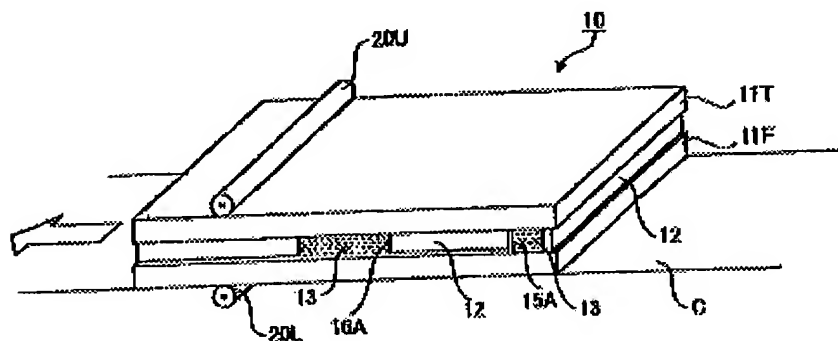
3. Claims 10-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasumi et al (Kawasumi) USPAT 5,978,065 in view of Sekido, Japanese Patent Application Publication JP360097321A.

As to claim 10, Kawasumi discloses [entire patent, especially embodiment 6, Figures 9A-9C, col. 9, line 23 through col. 10, line 62] a method of fabricating a liquid crystal cell, comprising:

a first step of obtaining a liquid crystal cell having liquid crystal [14] filled between two substrates stuck together by a sealant [Figures 9A and 9B];

a second step of discharging bubbles mixed in the liquid crystal from the inside of the liquid crystal cell by pressing the liquid crystal cell in a direction where the two substrates approach to each other [Abstract and Figure 9C; please consider the similarity of the illustrations of Kawasumi relative Applicant's Figure 2].

Figure 2 of Instant Application:



Figures from Kawasumi:

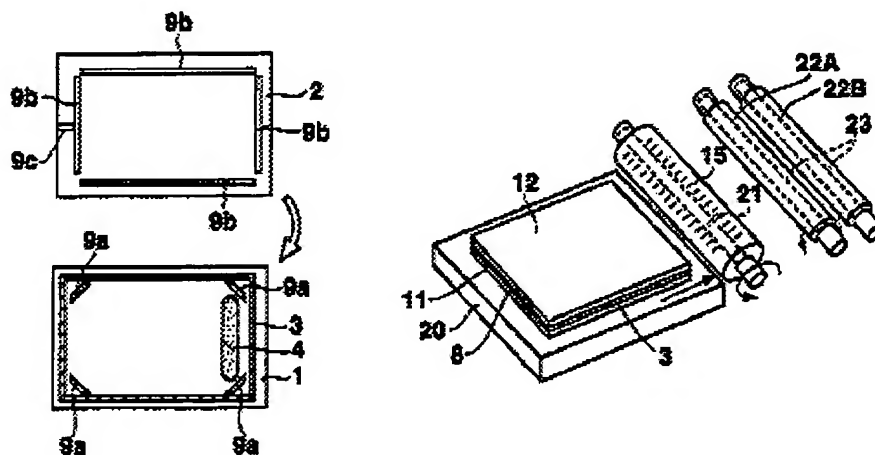


FIG. 9A

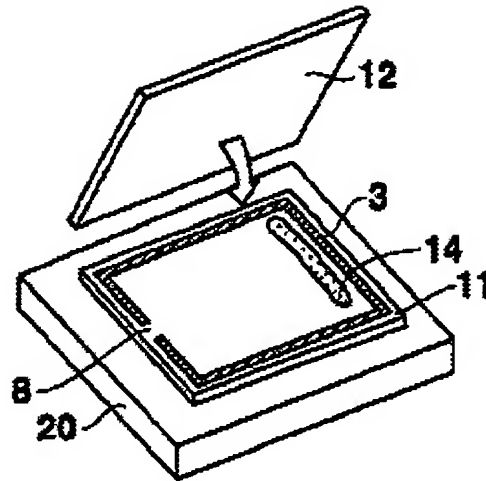


FIG. 9B

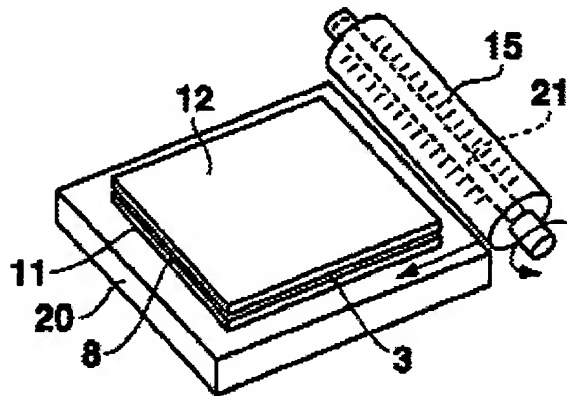
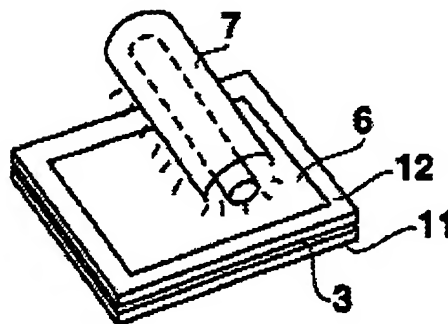


FIG. 9C



Kawasumi does not explicitly disclose a third step of replenishing the liquid crystal cell with liquid crystal by use of a capillary phenomenon.

Kawasumi teaches in his background of the invention that capillary phenomenon is a conventional method of injecting liquid crystal material into a cell [col. 1, lines 19-27] despite the fact it is a time consuming step to fill the entire display by the capillary method. However, it would be obvious to those having ordinary skill in the art to use a reliable conventional capillary method of injecting any small amount of liquid crystal (should any be needed for any reason) to fill any small void near an injection port since it would not take much time to add such a small amount of liquid crystal material.

As further evidence of the obviousness of the use of capillary phenomenon Sekido is applied.

Sekido teaches [abstract] that capillary action is a desirable method of filling liquid crystal without the inclusion of bubbles.

Sekido is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add the step of replenishing the liquid crystal cell with liquid crystal by use of a capillary phenomenon since it would be obvious to use a reliable conventional capillary method of injecting any small amount of liquid crystal needed to fill any small void near an injection port since it would not take much time to add such a small amount of liquid crystal material.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD method of Kawasumi with the step of replenishing the liquid crystal cell with liquid crystal by use of a conventional capillary phenomenon of Sekido since it would be obvious to use a reliable conventional capillary method of injecting any small amount of liquid crystal

needed to fill any small void near an injection port since it would not take much time to add such a small amount of liquid crystal material.

As to claim 11, Kawasumi discloses the method of fabricating a liquid crystal cell according to claim 10, wherein in the first step, the liquid crystal cell is obtained by dropping the liquid crystal [14, Figure 9A], onto one of the substrates coated with the sealant [3], and then superposing the other substrate thereon [Figures 9A and 9B].

As to claim 12, Kawasumi discloses the method of fabricating a liquid crystal cell according to claim 10, wherein the second step is carried out at a temperature for causing viscosity of the liquid crystal to be lower than the viscosity at a normal temperature, and the sealant to be softer than the same at a normal temperature [obvious given col. 9, lines 44-58].

As to claim 13, Kawasumi discloses the method of fabricating a liquid crystal cell according to claim 10, wherein in the second step, a gap between the two substrates is adjusted by pressing the substrates [col. 6, lines 12-21].

As to claim 14, the method of fabricating a liquid crystal cell according to claim 10, wherein in the third step, liquid crystal is replenished from a side of a conveying direction set for conveying the liquid crystal cell between the fabricating steps is relevant only to automation [the automated conveying direction] and is considered an

obvious expedient of automating that which can be performed manually. Also, directional sense only has relevance to the apparatus for manufacturing the claimed device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Monday through Thursday.

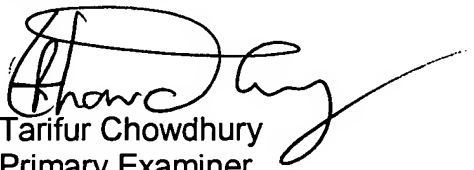
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



tlr

Timothy L Rude
Examiner
Art Unit 2871



Tarifur Chowdhury
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